BRANCHING OUT
IPM NEWSLETTER FOR TREES & SHRUBS

Black Oak Gall Wasp—A Threat in Southeastern NY & New England

by Dan Gilrein, Extension Entomologist, Cornell Cooperative Extension of Suffolk County

Black oak trees around Long Island, in parts of Rhode Island, eastern Massachusetts and now reportedly in eastern NJ have been plagued by a gall wasp that has caused severe damage to twigs. In some cases repeat attacks over the last few years have led to decline and mortality (or nearly) of apparently healthy trees. Often these are valued specimens in prominent places. Trees not killed may lose a few to many twigs, which break off and leave a thinner canopy and debris on the landscape. Arborists and homeowners alike are frustrated.

Black oak showing severe canopy thinning from black oak gall wasp. © Dan Gilrein

Cause

I referred to the culprit as the 'black oak gall wasp' (so far I have no proof that other oak species are attacked) and that seems to now be the accepted common name. The species was determined to be *Bassettia ceropteroides*, but then reclassified as *Callirhytis ceropteroides*. (It is misidentified in the reference Insects that Feed on Trees and Shrubs, 2nd ed., as *C. crypta*). With molecular genetics moving into the world of taxonomy we may yet see another species name emerge. Suffice to say the same insect seems to be responsible for damage to black oaks in LI, RI and MA. Besides symptoms noticed, affected twigs appear to be slightly swollen, eventually showing small emergence holes. Cutting into the twigs reveals small chambers inside where the wasps develop. Some twigs do survive though a few buds may fail to grow. Sometimes trees are left with tufts of persistent brown leaves on dead twigs over winter.

Emergence holes of the gall wasp Callirhytis ceropteroides and the typical slight swelling associated with infestation.© Dan Gilrein

Black oak gall wasp, May 2013 © Dan Gilrein

Black oak gall wasp ovipositing at base of new twig, May, 2014. © Dan Gilrein

History

The pest isn't exactly new to Long Island—arborists of some experience report seeing the damage decades ago. It has appeared sporadically there since the late 1980s with a particularly heavy and widespread outbreak in the early 1990s. Studies then found wasps emerging around late April to late May—I found large numbers active in mid-May in Oakdale in 2013 and somewhat fewer at the same time in 2014. Only females were found in galls and black oak was the only affected host, though some trees were left untouched.

Two twigs with the slight swelling characteristic of the gall wasp Callirhytis ceropteroides. The terminal buds on the upper twig have been killed; the lower ones remain alive but last year's growth on this twig is clearly stunted. © Dan Gilrein

Some infested trees did recover though more dieback was noted in residential than in forest sites. Wasp activity on emergence couldn't be determined and a reported July emergence wasn't confirmed, although Monica Davis, a graduate student with UMass at Joe Elkinton's lab, believes there is a summer emergence.

Management

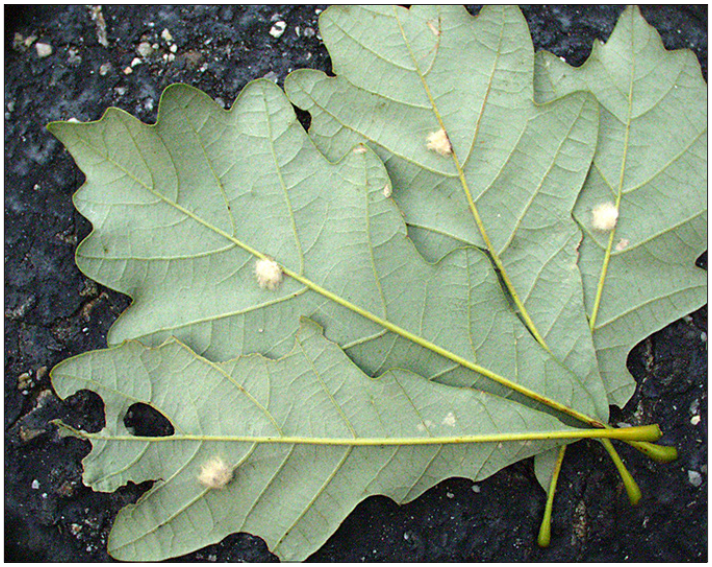
To my knowledge no treatment has been shown invariably effective. Some may actually work used preventively but the high variability in actual testing situations and our limited ability to run and replicate such trials may obscure performance. The only products specifically labeled for 'gall wasps' are Inject-a-Cide B (trunk injection) and Sevin SL (or other carbaryl material, foliar spray), but insecticides arborists have tried have given very mixed results. Over the last two years, with thanks to Bayard Cutting Arboretum's assistance and the support and initiative of Bartlett Tree Experts, we set out a small trial in May, 2013 to evaluate several trunk injections (none of which are labeled for this pest) on mature (avg. 40" dbh) black oaks showing heavy infestation, comparing trees treated with an experimental material, Tree-äge, or Lepitect with others left uninjected. There were at least four trees in each group except for Lepitect (two trees). We re-examined the trees this year prior to budbreak in March and again in mid-May, about one year after treatment. At least one tree in every group was in poor condition during the May evaluation, though on average remaining trees treated with the experimental material and with Tree-äge had somewhat fuller (if not significantly) canopies than those untreated or treated with Lepitect. Random twig samples collected from Tree-äge-treated trees had a smaller proportion of recent twigs with exit holes than those collected from other trees. I would caution that these results are NOT conclusive. We hope to learn more from field experience this year and will be checking the trees later this summer to see if differences among treatments become more apparent. In the meantime for arborists contending with this problem I suggest communicating with clients that this problem has not been well-studied, it is widespread, there are no proven effective treatments, and addressing cultural conditions to the extent possible (light fertilization, minimize root competition/compaction, proper irrigation) as the best answers we have at the moment. A letter from the local Extension office may help reassure that the best effort possible is being made under the circumstances. Arborists can provide a copy of the Cape Cod Extension factsheet on this, authored by Russ Norton, available at www.capecodextension.org/library/2012/10/Black-Oak-Gall-Wasp-Fact-Sheet1.pdf. A March, 2013 Tree Care Industry Magazine article discussed this in some detail as well (at http://tcia.org or www.pollyhillarboretum.org/wp-content/uploads/2012/08/Crypt-Gall-Wasp-Tree-Care-Industry-March-2013.pdf).

Injecting black oak for gall wasp trial © Dan Gilrein

Other oak galls

Keen observers will see many interesting and unusual homes that gall wasps and other insects make on oaks. Many of these are much less damaging than the black oak gall, though a few can be seriously disfiguring to trees. Here is a short selection of just a couple we have come across.

Andricus ignotus, a wooly oak gall on leaves of swamp white oak and some others in the white oak group, was sent in. It resembles some other woolly galls but forms on midribs or veins and consists of one or several chambers.



A wooly oak gall on leaves of swamp white oak © Dan Gilrein

A recent photo, sent from NJ, showed small seed-like 'pip' galls issuing from under caps of oak acorns. These are likely *Callirhytis operator*, known from trees in the red oak group (red, black scarlet, etc.). A similar photo can be seen here: www.forestryimages.org/browse/detail.cfm?imgnum=0488065